July-August festival of the Kurum, when they dance round the national mother, the kurum almond tree (*Nauclea Parvifolia*), wearing barley shoots in their hair, and the festival corresponds to the Hindu Nag Punchami, the five mother snakes held in the same month. The union of the rice-eating sons of the south with the northern eaters of barley is marked by the Magh festivals of January-February (p. 102) in Chutia Nagpore, and the Magh festival of Puryag at the junction of the Jumna and Ganges, where the union with the men of the south of the Kushika Gonds, who came down the Jumna, is celebrated by the offering as sacrifices of living victims brought in by the northern people as additions to the southern ritual, in which the only sacrifices had been the first fruits of the soil offered by the primitive villagers, and the fowls slain by the Munda sun worshippers.

It was the castes who form the northern stratum of the community who began the custom of wedding brides and bridegrooms to mahua and mango trees, while almost all castes still retain the leafy marriage bower in which weddings are celebrated as a reminiscence of their ancestors, who were sons of the tree before the northern growers of oil-seeds, barley, and other crops of Asia Minor substituted individual marriages for village unions.

The last stage in primitive national history is that of the race of the trading Jains of the Bronze age, and its length is marked by the vast excavations they have made in the copper hills of Lando in Seraikela and Baragunda, under Parisnath. They formed the port of Tamluk, called Tamra-lipti or Copper-port, and have left lasting memorials of their rule in the ruins of their capital at Dalmix on the Subanrikha, their temples at Telkupi (p. 177), and along the ancient road to Orissa, and in the establishment of the brass-ware industry of Manbhum, which supplied the brass vessels looked on as sacred in modern Hindu domestic ritual.

J. F. HEWITT.

THE SEISMOLOGICAL CONGRESS IN STRASSBURG.

IN July of last year the British Government received an official invitation from Germany to take part in a conference the object of which was to establish an international inquiry about earthquakes. The meetings of this conference, which took place in Strassburg—July 23 to 28—usually commenced at 9 or 10 a.m., and concluded at about 5 or 6 in the afternoon. The proceedings were reported at length in the *Strassburger Korrespondenz* and other papers.

At the opening ceremony the chair was occupied by His Highness Prince Hohenlohe-Langenburg, his supporters being representatives of the Imperial Government and other officials. Twenty-five States or countries were represented, but the total number of delegates and guests who were at liberty to take part in the proceedings up to the time when final votes were demanded seems to have been exactly one hundred. As sixty-two of these were Germans, it can be easily imagined that German language and German influence preponderated in debates, and although ultimate results were arrived at by the single voices of separate countries, when Great Britain and her colonies, like the German Empire, had each one vote only, it is difficult to suppose that these results are entirely free from German bias.

France was not officially represented. When we consider the powerful influence exercised by this country upon the progress of science, the impetus given to seismology by Perrey, Montessus and other workers, together with the desirability of establishing stations in French colonies, a feeling of regret arises that so important a State was unable to assist the congress. Whether this would have been the case had the same been held in some other town than Strassburg is a matter for conjecture. The chief results arrived at were as follows:—

A central association is to be formed with its headquarters in Strassburg. Each contributing country will be represented by one member on a governing committee which elects a president, a chief for the central office, and a general secretary. The chief will reside in Strassburg, but it was decided that the president and secretary should be elected from outside Germany. Although it is desirable that these officers should represent different nationalities, it is also desirable that the chief of the central office and his secretary should reside at the central office.

It was suggested that the work of the association should be as follows:—

(1) To make observations after a common plan approved by the association. Inasmuch as there now exists in connection with the British Association, in Italy, in Japan, and in other countries established systems for seismic observations, which on account of the expenditure it would involve and for other reasons could not be reduced to a common plan, and further, that as direction from a centre would destroy incentive to investigation, this proposition was abandoned.

(2) To carry out experiments on important matters.

(3) To establish and support observatories.

(4) To collect, study, and publish reports or *résumés* of the same.

The detailed investigations referred to in the second suggestion are not unlike headings for chapters in a treatise on seismology. This work, and that embodied in the third and fourth proposals, are for the first twelve years to be carried out at a cost of 1000*l.* per annum, and this sum is to include a salary for the general secretary. The contributions to this inadequate sum are to be apportioned amongst the cooperating States according to population, the British contribution to be 160*l.* per year. Whether the British and other Governments will take part in the scheme remains to be seen. Assuming that they do, inasmuch as 1000*l.* per year is far too small an amount to meet expenses connected with the proposed programme, it seems likely that the central office at Strassburg, in its early days at least, will become a depôt from which reports are issued and a distributing centre for earthquake registers and other materials bearing upon recent seismological research. This in itself is a work of a magnitude not generally realised, a mere catalogue of earthquakes which have been recorded during ten years in Japan, for example, making in itself a volume of 1000 pages. To reduce publications of this description, written in Chinese characters, to a form in which European investigators might wish to see them would be a labour which but few would undertake. Yet Germany offers men who are willing to face such labours, whilst her Imperial Government asks the civilised world to cooperate in carrying out the gigantic task. Now at the eleventh hour, in the name of science and because other nations are apparently unprepared or indifferent to the advantages of centralisation, it seems likely that the seismological work of all countries is to be swept into one great net.

Germany has but few observing stations and no organised system for seismological investigations of her own, yet she is willing to take beneath her ægis the organisations of the world. Whether it be in the relief of a beleaguered city or in the study of an obscure science, Germany desires to take the lead. To turn the eyes of the world towards Berlin as the centre of

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all learning turns the steps of students in the same direction, and a Government which fosters such a policy is deserving of its country. Germany has offered to take upon her shoulders a burden which others shirk, and if this can be achieved to the satisfaction of those concerned, she deserves great praise.

While this no doubt is one view of the situation, it must not be overlooked that Governments, particularly those that do not feel justified in giving support to seismological investigation within their own territory, may hesitate in offering support to such investigation in a foreign State. To suggest that a powerful empire needed 1000*l.* a year to carry on the proposed work would be wanting in good taste. Neither can it be suggested that delegates at the conference have carried away with them the impression that they are to receive something greater than a *quid pro quo.* Should the proposed convention be ratified, what they may possibly discover is that a birthright has been exchanged for a mess of pottage, and for a period of twelve long years a suzerainty has to be acknowledged. Truly enough the movement is called international, but at the same time it bears the character of absorption and crystallisation at a centre, and it is not every country that will care to add to its neighbour's prestige at the expense of its own, play second fiddle, and pay for the privilege. That seismology will benefit by cooperation there is but little doubt, but whether Germany can carry out what has been proposed, and whether the scheme has been presented in its best form are matters open to discussion.

NOTES.

WE are informed that Mr. A. S. le Souef has been appointed director of the zoological garden at Sydney in succession to the late Mr. Catlett. Mr. Dudley le Souef, his elder brother, has been director of the gardens of the Zoological and Acclimatisation Society at Melbourne for several years, and a younger brother is director of the newly established garden at Perth, in Western Australia, so that the three brothers occupy three corresponding positions in the three Australian capitals.

FOR the study of bird migration, Mr. W. Eagle Clarke, assistant keeper in the Natural History Department of the Edinburgh Museum of Science and Art, has obtained permission from the Elder Brethren of Trinity House to spend a month upon the Kentish Knock Lightship, situated off the mouth of the Thames, and about twenty-one miles from the nearest point of land. The position of the vessel affords exceptional opportunities for observing the east to west autumnal movements of birds across the southern waters of the North Sea.

THE meeting this year of the French Association for the Advancement of Science was held at Angers under the presidency of M. Émile Levasseur, who, in his presidential address, dealt with one of those economic questions around which, at the present time, many controversies are being raised. "Wages," said M. Levasseur, "have furnished the material for hundreds of volumes and millions of fugitive leaflets which daily discuss the subject in all civilised countries," and he went on to devote his address to a consideration of three main questions affecting the wage-earner. These may be stated in the following words. "What causes determine the rate of wages?" "Have wages increased?" "Is the wage-earner a permanent factor in the organisation of labour?" In discussing the first question, the president recognised a number of causes for the variations in the rate of wages; among these factors are the productivity of the worker, the cost of living for the workman and his family, the general prosperity of the country, the special abundance of capital in each industry, the opposition between workers and employers, and political institutions and customs. After examining his second question, M. Levasseur concluded that wages have risen in France and in other civilised countries, and that the cause of it is the growth of riches, the progress of industry, the development of machinery, and the greater individual and collective value of the worker. The grants for scientific research made by the association amount this year to about 760*l.*, and this sum was divided among some fifty recipients, including certain scientific associations as well as men of science.

A REUTER telegram from Buenos Ayres states that severe shocks of earthquake were felt on August 12 at Mendoza. A number of houses and the tower of a church were destroyed.

VESUVIUS is in a state of active eruption. The Rome correspondent of the *Daily Chronicle* says a stream of boiling lava is flowing in a north-easterly direction towards San Giuseppe and the village of Ottajano, and has already reached a length of 800 metres.

A SEVERE hurricane passed over the island of Jamaica during the night of August 10–11, causing serious damage and loss of life. On August 8 the U.S. Weather Bureau notified its local agent at Kingston that a disturbance north-east of Barbados was moving to the north-west over the Windward Islands, and would probably develop a dangerous strength. Little notice, however, was taken of the warning. The storm was most severe in the early morning hours of August 11, and the whole of the eastern and north-eastern half of Jamaica has been desolated by it.

THE preliminary international conference on wireless telegraphy came to an end on August 13. The results of the conference have been embodied in draft regulations for the control of wireless telegraphy which it is proposed to submit to the various Governments concerned. A further conference may then be summoned to enter into an international convention based on these regulations; it is said that Germany intends before long to invite the European sea Powers and the United States to take part in a more general conference with this object. The conclusions at which the delegates at the preliminary conference arrived have not yet been made public.

AN instance of the practical advantages of wireless telegraphy at sea was given by the *Observer* last Sunday. A gentleman crossing to New York by the *Campania* discovered in the middle of the voyage that he had not sufficient money to pay his customs dues on arrival, nor did he know anyone on board from whom to borrow. He remembered, however, that his mother was crossing from New York by the *Lucania,* and the two vessels having got into communication by wireless telegraphy, he transmitted a request to her to pay the purser 10*l.*, asking him to advise the purser of the *Campania* to pay the sum to him. The transaction was successfully accomplished within an hour; it seems that with the spread of wireless telegraphy on ships, all the business that we are accustomed to transact on land will be able to be carried on with equal facility at sea.

AN account of some further experiments on the heat radiating power of radium, carried out by M. Curie in conjunction with Prof. Dewar at the Royal Institution at the time of M. Curie's lecture last June, is given in the *Times* of August 13. The facilities for accurate research at low

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